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(54) Method of coding LSP coefficients during speech inactivity

(57) A speech coding apparatus includes a frequency parameter generating unit (181) that generates LSP (line spectral pair) coefficients of an input signal. When the input signal is a non-speech signal, it generates the LSP coefficients of the non-speech signal in such a manner that they approach the LSP coefficients of the speech signal. Thus, even when the input signal is the non-speech signal, its LSP coefficients are quantized by referring to the LSP quantization codebook (7) which is specifically prepared for the speech signal. Although a conventional speech coding apparatus has a problem in that even when it transmits the non-speech signal in a good condition, a conventional speech decoding apparatus cannot always decode the non-speech signal correctly, the present speech coding apparatus can solve the problem even when the receiving side uses the conventional speech decoding apparatus.

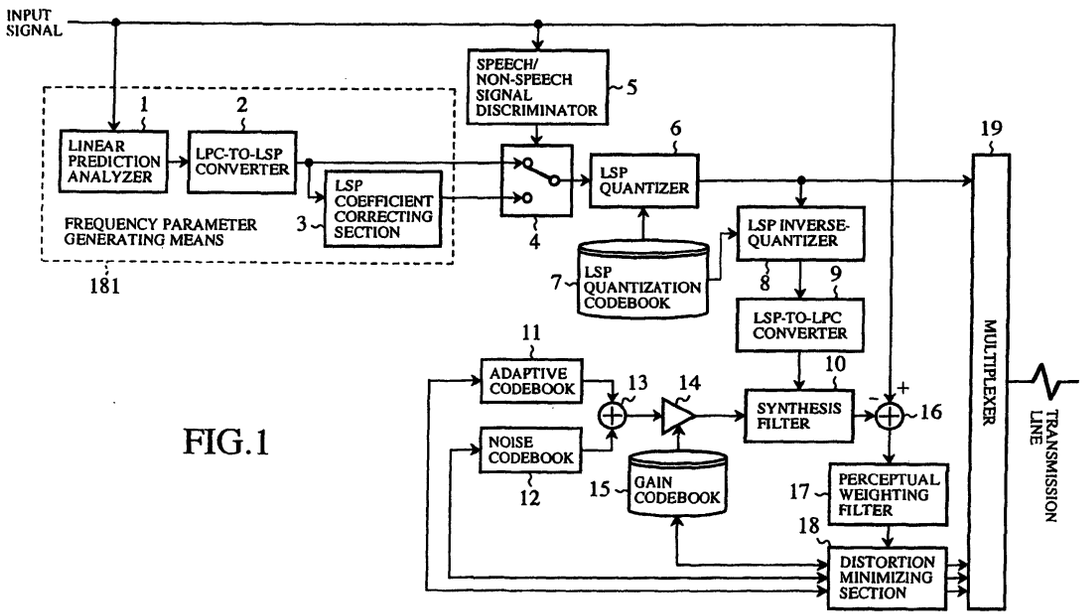

FIG.1

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EUROPEAN SEARCH REPORT

Application Number
EP 01 11 7829

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A	WO 98 04046 A (ADOUL JEAN PIERRE ;SALAMI REDWAN (CA); LAFLAMME CLAUDE (CA); UNIV) 29 January 1998 (1998-01-29) * abstract *	9-20	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G10L H03M H04M
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	9 July 2003	Köster, S

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-5,7,8

   adaptation of DTMF signals in spectal parameter domain

2. Claim : 6

   selection of codevectors for different types of DTMF signals

3. Claims: 9-20

   time efficient quantization of DTMF signals

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 01 11 7829

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82